

## REMARKS

### *I. Introduction*

In the Office Action dated November 14, 2002, the examiner rejected pending claims 2-6 "under 35 U.S.C. 103(a) as being unpatentable over Green {U.S. Pat. 4,617,154}, Sullivan, III et al. {U.S. Pat. 4,231,956} and O'Lenick, Jr. et al. {U.S. Pat. 5,196,589}, in combination with each other."

During interviews with the examiner on November 19 and 22, 2002, an inquiry was made about the closest prior art to make a comparison. In response, "the Examiner indicated that the O'Lenick reference was the closest prior art. The Examiner indicated, that if a comparison is done, that Examples 1 and 10 in O'Lenick should be compared to Example 1 and a glycol example, such as Example 2 in the instant specification." Interview Summary, date mailed 11/25/02.

As discussed below, a comparative analysis of the presently claimed invention and O'Lenick shows that applicants' invention would not have been obvious to a person of ordinary skill in the art when it was first reduced to practice. Consequently, applicants believe they have sufficiently rebutted the examiner's obviousness rejections, and respectfully solicit the application to issue.

### *II. Claim Rejections Under 35 U.S.C. §103(a)*

The examiner has rejected the applicants' pending claims 2-6 under 35 U.S.C. §103(a). However, the examiner has failed to meet the burden of establishing even *prima facie* obviousness by a preponderance of the evidence. And, assuming *arguendo*, if *prima facie* obviousness has been established, then there exists sufficient objective evidence of non-obviousness to rebut the *prima facie* case.

#### A. Examiner Has Failed to Establish *Prima Facie* Obviousness

Three requirements must be fulfilled in order for a *prima facie* case of obviousness to be satisfied. First, there must be some suggestion or motivation in the references themselves or available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art references combined must teach or suggest all the claim limitations. MPEP §2143. Both the suggestion to carry out the claimed process and the reasonable expectation of success must be found in the prior art and not based on the applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

In the present case, because O'Lenick teaches away from applicants' claimed invention, the examiner has failed to establish a motivation for an ordinary person skilled in the art to modify the teaching of O'Lenick in a way to arrive at applicants' claimed invention. The Federal Circuit has held that a reference teaches away "when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

Reading O'Lenick, a person of ordinary skill in the art would be led to a direction divergent from the path taken by the present applicants. Specifically, O'Lenick teaches that in the case of alkaline catalysts such as KOH, NaOH, NaOCH<sub>3</sub> or benzyltrimethylammoniumhydroxide the reaction has to be performed in the presence of an added stable free radical compound. By contrast, according to the presently claimed process, diazabicycloalkene catalysts are used without the addition of a free radical compound. Thus, a person of ordinary skill in the art, reading O'Lenick, would have been led astray in thinking that free radical compounds, which are actually excluded from the presently claimed process, are necessary.

For the foregoing reasons, the examiner has failed to establish a *prima facie* case of obviousness.

#### B. Objective Evidence of Non-Obviousness

Assuming *arguendo* that the examiner has established *prima facie* obviousness, then there still exists sufficient objective evidence of non-obviousness to rebut examiner's *prima facie* case. As the Supreme Court of the United States stated in *Graham v. John Deere Co. of Kansas City*, 383 US 1, 17-18, 148 USPQ 459, 467 (1966), such objective evidence might include "commercial success, long-felt but unsolved needs, failure of others." Comparing the O'Lenick reference to the presently claimed invention reveals objective evidence of non-obviousness of applicants' invention.

The critical difference between the prior art and the claimed invention is the catalyst, namely the diazabicycloalkene catalyst in applicants' invention. As a result, applicants' invention shows unexpected results where others had failed and it provides a solution to a long-felt need.

Comparative experimental data reveal the unexpected results of applicants' invention, where O'Lenick fails. In O'Lenick, the product yield starting from polyethylene glycol (i.e. a *glycol*) and acrylonitrile is only 58.2% (example 1), and the product yield starting from stearyl alcohol (a *primary alcohol*) and acrylonitrile is only 68.2% (example 10). By contrast, applicants' examples 5, 7, and 8 show unexpected results. Starting from diethylene *glycol* or methanol (a *primary alcohol*) and acrylonitrile, using the diazabicycloalkene catalyst, surprisingly high yields of the corresponding  $\gamma$ -alkoxyamines (after distillation) are achieved: 88% (example 5), 95.9% (example 7), 96.9% (example 8).

In addition to the such unexpected results, applicants' invention provides a solution to a long-felt need. The solved technical problem underlying the invention was to find an *improved*

process for preparing  $\gamma$ -alkoxyamine, which is obtained in *higher yield* than the prior art, starting from an  $\alpha,\beta$ -unsaturated nitrile without there being any need for any prior costly removal or destruction or neutralization of the catalyst used for the 1,4-addition of an alcohol to the  $\alpha,\beta$ -unsaturated nitrile. As noted above, applicants solve this problem using diazabicycloalkene catalysts without the addition of a free radical compound, which O'Lenick relies on.

Thus, even if there were a *prima facie* case of obviousness, applicants think there is sufficient objective evidence of non-obviousness such as unexpected results and a solution to a long-felt need to rebut such a *prima facie* case were it to exist.

Applicants respectfully request the rejections under 35 U.S.C. §103 be withdrawn in light of the remarks above.

### III. Conclusion

In view of the foregoing remarks, applicants consider that the rejections of record have been obviated and respectfully solicit passage of the application to issue.

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Respectfully submitted,

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